

1,431,019.

FIG. 1.

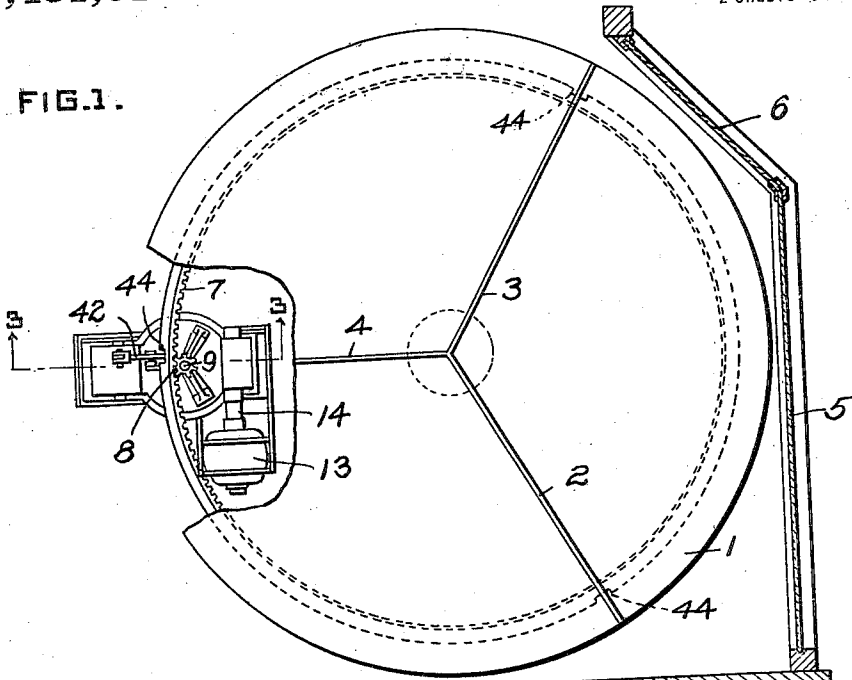
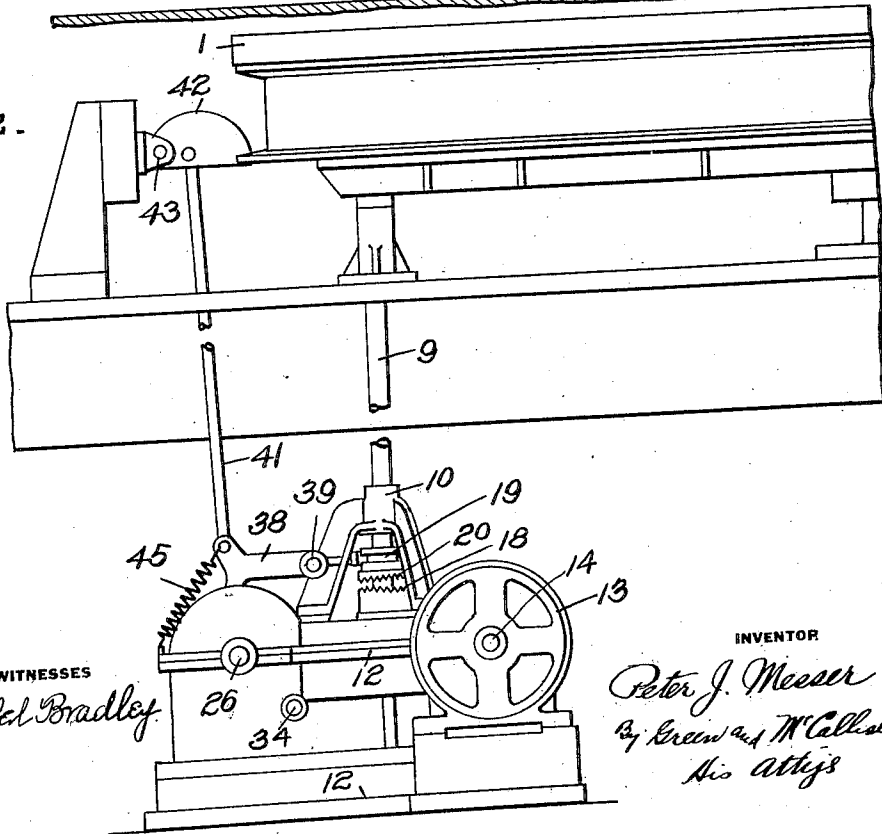


FIG. 2.

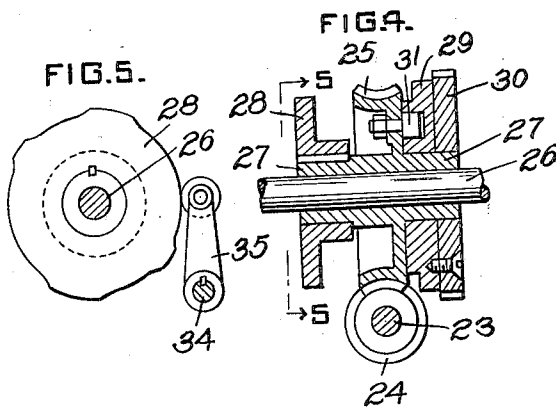
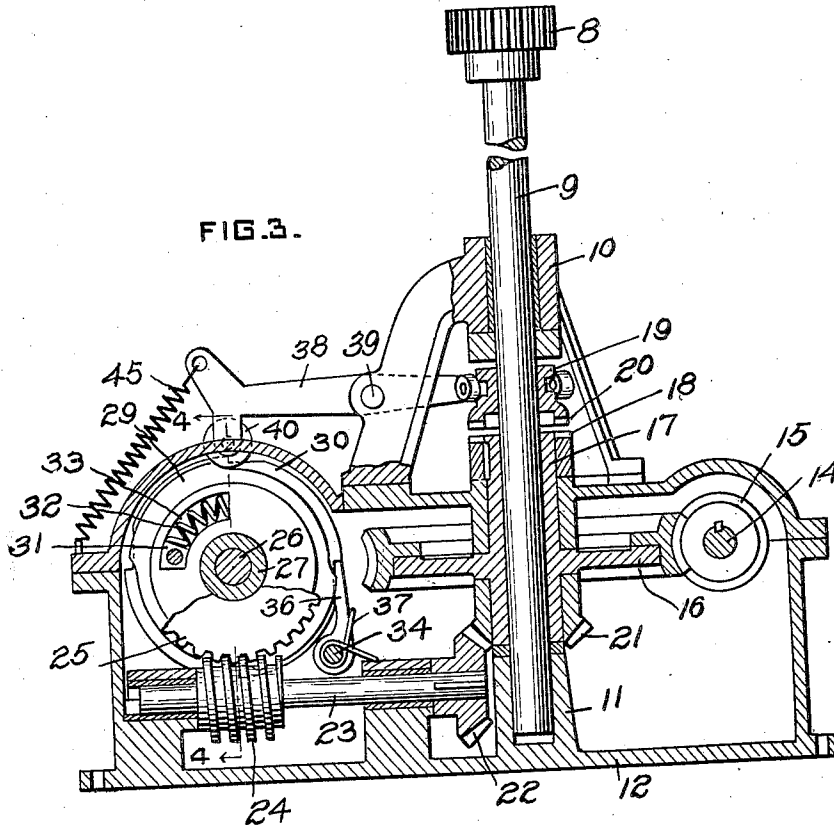


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UNITED STATES PATENT OFFICE.

PETER J. MESSER, OF OLEAN, NEW YORK.

DISPLAY DEVICE.

Application filed March 8, 1920. Serial No. 364,333.

To all whom it may concern:

Be it known that I, PETER J. MESSER, a citizen of the United States, and a resident of Olean, in the county of Cattaraugus and State of New York, have made a new and useful Improvement in Display Devices, of which the following is a specification.

My invention relates to display devices and consists in mechanism for intermittently rotating a display platform. I desire to increase the capacity of show windows by presenting one display of goods to the passersby for a definite period and then substitute another display of goods. I show my device as applied to a show window platform upon which the goods may be placed and which may be intermittently rotated to present different articles or groups of articles to the show window.

In the accompanying drawings illustrating a preferred construction and application, Figure 1 is a horizontal section through a show window and a plan view of my platform which is broken away in part to more clearly set forth its mechanism; Fig. 2 is a partial side view of the platform and an elevation of its operating mechanism; Fig. 3 is a vertical section through the lower mechanism and is taken on the line 3—3 of Fig. 1 but drawn to a larger scale; Fig. 4 is a vertical section at right angles to Fig. 3 and taken on line 4—4 thereof, and Fig. 5 is a side view on line 5—5 of Fig. 4.

In Fig. 1 the circular platform 1 mounts three vertical partitions 2, 3 and 4 which divide the platform into sectors each forming substantially one third of the total area. The sector between partitions 2 and 3 is presented to the show windows 5 and 6 while the other two sectors are temporarily hidden from the view of persons outside of these windows. Platform 1 is adapted to rotate about a central point and its under side is provided with an internal gear 7, the teeth of which face horizontally. Meshing with this gear is a pinion 8 fixedly mounted on a vertical shaft 9 which extends downwardly and is journaled in spaced bearings 10 and 11 in a frame casting 12 the base of which is seated upon a foundation such as the basement floor of a building.

Frame 12 mounts a motor 13 and the motor spindle 14 carries a worm 15 which drives a worm wheel 16 rotatably mounted on shaft 9. Wheel 16 has an integral portion 17 which is provided with upwardly

facing teeth 18. Splined on shaft 9 is a collar 19 provided with downwardly facing teeth 20. Teeth 18 and 20 form clutch means for locking shaft 9 to wheel 16 and thereby providing rotation of the shaft and platform 1.

To engage and disengage this clutch, and thereby provide intermittent movement of the platform, I provide mechanism driven by wheel 16 through bevel gears 21 and 22, the former affixed to wheel 16 and the latter fixed to a horizontal shaft 23 journaled in frame 12. A worm 24 is fixedly mounted on shaft 23 and drives a worm wheel 25 rotatably mounted on a horizontal shaft 26 extending at right angles to shaft 23 and above same and also journaled in frame 12. The hub 27 of wheel 25 projects in both directions along shaft 26 and forms bearings for a timing cam 28, a clutch cam 29 and a stop ratchet 30. Timing cam 28 is keyed to hub 27. Stop ratchet 30 is fixedly secured to clutch cam 29. Neither ratchet 30 nor cam 29 is fixed to hub 27 but are rotated by a stop 31 on wheel 25 which engages one end of an arcuately disposed compression spring 32 the other end of which bears against one end of an arcuate recess 33 in cam 29.

A rocker shaft 34 parallels shaft 26, is journaled in frame 12 and has an arm 35 keyed to it in line with cam 28, and a pawl 36 keyed to it in line with ratchet 30. A spring 37 pushes against pawl 36 so that the latter is in position to engage a tooth in ratchet 30 when same presents itself.

A lever 38 is pivoted at 39, its right hand end engaging a groove in collar 19 and its left hand end journaling a roller 40 aligned with cam 29. A rod 41 is secured to the roller end of lever 38 and extends up and is connected to a stop latch 42 which is pivoted at 43 to a stationary block. The edge of platform 1 has radially disposed notches 44 at each partition adapted to receive latch 42 when aligned therewith. A coil spring 45 pulls down on lever 38 and maintains contact of roller 40 and cam 29.

Operation.—Motor 13, wheel 16, worm 24, wheel 25 and cam 28 rotate continuously. Wheel 25, through stop 31 and spring 32, tends to rotate cam 29 and ratchet 30 in a clockwise direction and so functions until one of the teeth of the ratchet is engaged by pawl 36. This interrupts rotation of the ratchet and cam 29 and is the temporary position indicated in Fig. 3. The pull of

spring 45 holds collar 19 in its upper position which disengages the clutch elements 18 and 20 so there is no rotating tendency for shaft 9.

5 Further rotation of wheel 25 compresses spring 32 and brings the rise on cam 28 against the roller on arm 35 which throws the latter, shaft 34 and pawl 36, thereby releasing ratchet 30. The energy stored in
10 spring 32 quickly moves cam 29 so as to bring its rise under roller 40, thereby raising the left hand end of lever 38 which releases the platform from latch 42 and engages clutch members 18 and 20.

15 Pawl 36 will engage the next tooth on ratchet 30 and hold same and cam 29 in clutch engaging position until cam 28 again throws the pawl out of engagement with the ratchet when spring 32, having been compressed again, will quickly move cam 29,
20 shifting lever 38 and disengaging the clutch. This cycle is repeated as long as the changing display is desired.

It will be understood that the gearing between wheel 16 and shaft 26 and between
25 shaft 9 and the internal gear 7 are so timed and proportioned that partitions 2, 3 and 4 will be at proper positions when the clutch is disengaged and latch 42 drops to lock the platform. This later device is to prevent
30 momentum of the loaded platform and friction between the various elements of the mechanism from moving the display except when shaft 9 is positively driven.

35 It will be understood that the number of display sectors may be increased or diminished by erecting partitions as desired and by changing the cams accordingly or by changing the gear ratios, although I prefer
40 the former method. It may be also desired to install a single display upon platform 1 and to rotate same constantly or intermittently. By securing lever 38 in clutch engaging position the platform will rotate continuously.
45

It will be seen that by use of my invention the effective value of a show window may be increased to several times its original amount, first by permitting the display of different groups of merchandise and, second, by displaying different views of the same objects. 50

My device is capable of numerous modifications without departure from its principles and I contemplate the usual variations and
55 substitutions of mechanical equivalents for the respective elements in the commercial development of my invention.

I claim:—

1. In a display device, a rotatable platform, a shaft geared to same, a constantly rotating wheel journaled on said shaft and means for alternately locking and unlocking
said shaft to said wheel. 60

2. In a display device, a rotatable platform, a shaft geared thereto, a drive wheel rotatably mounted thereon, clutch members
on said shaft and said wheel and cam controlled means driven by said wheel and adapted to engage and disengage said clutch
70 members at predetermined intervals.

3. The combination in a display device having a rotatably mounted platform, of a constantly rotating wheel, a shaft upon
which said wheel is mounted, clutch members
75 on said shaft and said wheel, a cam driven by said wheel and means controlled by said cam for operating said clutch device.

4. In combination with a rotatable display platform, provided with radially disposed
80 notches, mechanism for intermittently rotating said platform, a latch mounted adjacent the path of travel of said notches and means for engaging said latch with one of
85 said notches when said platform is stationary.

In testimony whereof, I have hereunto subscribed my name this 27 day of Feb., 1920.

PETER J. MESSER.